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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/648,191

08/23/2000

Yang-Woon Na

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04/24/2003

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EXAMINER

BERCK, KENNETH A

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 04/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/648,191

Applicant(s)

NA ET AL.

Examiner

Ken A Berck

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 15-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 and 7-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Haven (US 5650690).

Regarding claim 1, Haven discloses (figs 2, 3, 4 6, 10 and 12) a flat panel display with a faceplate to form a vacuum tight cell, having a plurality of electron emission sources, a light emission unit placed within the cell to emit light from the cell, a frame mounted on the backplate having opening portions, the electron emission sources being exposed through the opening portions towards the faceplate, a plurality of spacers formed on the frame positioned at a non-display area within the cell, a plurality of gate electrodes formed at a surface of the frame with a predetermined pattern, the gate electrodes having opening portions communicating with the opening portions of the frame.

Regarding claim 2, Haven discloses the frame is formed with a photosensitive glass.

Regarding claim 3, Haven discloses a focusing electrode formed on an opposite surface of the frame with a predetermined pattern, the focusing electrode having opening portions communicating with the opening portions of the frame.

Regarding claim 4, Haven discloses a plurality of cathode electrodes formed on the backplate within the cell, emitters formed on the cathode electrodes as the electron emission sources while being placed within the opening portions of the frame, anode electrodes formed on the faceplate within the cell with a predetermined pattern and a plurality of phosphors formed on the anode electrode.

Regarding claim 5, Haven discloses the emitters are face-emitters.

Regarding claim 7, Haven discloses the spacers are formed on a one-sided surface of the frame.

Regarding claim 8, Haven discloses the spacers are formed on both surfaces of the frame opposite to each other.

Regarding claim 9, Haven discloses the spacers and the frame are formed in a body with the same material.

Regarding claim 10, Haven discloses the frame has holders, and the spacers are fitted within the holders.

Regarding claim 11, Haven discloses the support is formed at a side portion of the frame in a body such that the support fixedly contacts the faceplate.

Regarding claim 12, Haven discloses the support is fitted between the faceplate and backplate.

Regarding claim 13, Haven discloses a dielectric layer formed on the backplate.

Regarding claim 14, Haven discloses the dielectric layer is formed with a photosensitive material.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haven (US 5650690) in view of Chuang et al. (US 6359383).

Haven discloses all of the above claim limitations but fails to clearly point out using carbon nano-tubes.

Chuang discloses using carbon nano-tubes to form the emitter in order to reduce cost and to avoid size limitations.

Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the display of Haven with the carbon nano-tubes to form the emitter in order to reduce cost and to avoid size limitations, as taught by Chuang.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ken A Berck whose telephone number is (703)305-7984. The examiner can normally be reached on Mon-Fri 8:30-4:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703)305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7382 for regular communications and (703)308-7382 for After Final communications.

Art Unit: 2879

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

kab

April 20, 2003


NIMESHKUMAR D. PATEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800